



**Brunsing Associates, Inc.**

January 11, 2006

Project No. 691

Ms. Joan Fleck  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403

**Groundwater Monitoring Report, November 2005**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Dear Ms. Fleck:

This report presents the results of the groundwater monitoring performed at the Groth Motors site, 505 Santa Rosa Avenue, Santa Rosa, California (Plate 1) by Brunsing Associates, Inc. (BAI). Water level measurements and groundwater sampling were performed on November 11, 2005. This report was prepared to fulfill the monitoring requirements of the North Coast Regional Water Quality Control Board (RWQCB), as outlined in their letter dated December 30, 2002.

#### **Site History**

A Phase I Environmental Site Assessment (ESA) report was prepared for the site, as part of a real estate sale. The Phase I ESA found evidence that a gasoline station was formerly located at the site in the early 1950's. No records pertaining to the locations of underground storage tanks (USTs) or whether the USTs had been removed from beneath the site were discovered.

Based on the findings of the Phase I ESA, BAI conducted research regarding the adjacent property and performed a limited site investigation. A records review of the adjacent property located at 421 Santa Rosa Avenue (Plate 2) was performed to assess contamination at the 421 Santa Rosa Avenue site. The records review indicated groundwater contamination was present beneath the 421 Santa Rosa Avenue site and that groundwater flowed towards the northwest.

On August 3, 2000, BAI conducted a limited field investigation that included a geophysical survey and excavation of a trench in an area where a "suspicious" object was located during the geophysical survey. The trench was excavated south of the "suspicious" object because of the presence of an underground electrical line. No USTs were observed in the trench, however, petroleum hydrocarbon odors were observed in the soils removed from the trench. A soil sample was collected from the bottom of the trench and analyzed for total petroleum hydrocarbons (TPH) as gasoline, benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary

butyl ether (MTBE). TPH as gasoline was reported at 42 milligrams per kilogram (mg/kg), and toluene, ethylbenzene, and xylenes were reported at 14 to 44 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ).

On May 31, 2001, three USTs and the associated fuel lines were removed by John's Excavating. The USTs did not appear to have any obvious holes, however, one of the USTs was almost full of water. Groundwater was not encountered in the excavation. Ms. Joan Fleck of the RWQCB and a City of Santa Rosa Fire Department official were at the site on May 31, 2001, and based on the field observations and photoionization detector (PID) readings, requested that the area be over-excavated to remove as much of the contaminated soil as practical. One confirmation soil sample was collected from the bottom of the overexcavation and four sidewall soil samples were collected for analyses. Approximately 150 cubic yards of soil were excavated and stored onsite in 2 separate 75 cubic yard stockpiles. One 4-point composite soil sample was collected for analyses from each stockpile. The confirmation and stockpile composite soil samples were analyzed for TPH as gasoline, TPH as diesel, BTEX, and MTBE, and for total lead. The final depth of the excavation was approximately 12 feet below ground surface (bgs). Petroleum hydrocarbons were detected in confirmation soil samples collected from two of the sidewalls and from the bottom of the excavation. The results of the tank removals and over-excavation were presented in the BAI document "UST Removal Activities and Overexcavation", dated July 17, 2001.

Three groundwater monitoring wells (MW-1, MW-2, and MW-3; Plate 2) were installed at the site in April 2002. The well installation and initial groundwater sampling were reported in BAI's "Soil and Groundwater Investigation Report", dated August 13, 2002. A quarterly groundwater monitoring program has been conducted at the site since the installation of monitoring wells MW-1, MW-2, and MW-3.

Between March 15 and 17, 2004, BAI supervised the advancement of four soil borings and installation of two groundwater monitoring wells. Soil borings B-1 through B-3 were drilled on-site and soil boring B-4 and monitoring wells MW-4 and MW-5 were drilled off site (Plate 2). The results of the March 2004 drilling activities and groundwater monitoring event were included in the BAI document "Soil and Groundwater Investigation and Groundwater Monitoring Report", dated July 6, 2004.

Monitoring at the site is being coordinated with the monitoring being performed at 421 Santa Rosa Avenue. With the exception of the January 2005 groundwater level measurements, which were collected by BAI, groundwater level measurements and analytical data for the monitoring wells associated with the 421 Santa Rosa Avenue site (wells designated as CMW) are supplied by Clearwater Group Environmental Services (Clearwater), the consultant for 421 Santa Rosa Avenue site.



### Water-level Measurements

Depth to water levels in the onsite monitoring wells (MW-1, MW-2, and MW-3) and off-site monitoring wells (MW-4 and MW-5), as well as Clearwater monitoring wells (CMW-4 and CMW-5), were measured on November 11, 2005 by BAI personnel. Depth to water measurements in monitoring wells associated with the 421 Santa Rosa Avenue site (CMW-1A, CMW-2A, CMW-4, CMW-5, CMW-6, CMW-7, CMW-8, CMW-9, CMW-10, CMW-11, and CMW-12) were independently collected on October 28, 2005 by Clearwater personnel. Based on the data provided by Clearwater, the groundwater elevations and flow directions on October 28, 2005 are depicted on Plate 3.

In the immediate vicinity of the former USTs, the November 11, 2005 predominant groundwater flow direction at 505 Santa Rosa Avenue ranged from northwest to southwest. In the vicinity of off site monitoring wells MW-4 and MW-5, the groundwater flow direction ranged from west to southwest (Plate 4). The predominate groundwater flow direction at the 421 Santa Rosa Avenue site appears to be radial, centered near well CMW-11 (Plate 3). In the northeastern portion of 421 Santa Rosa Avenue, the flow direction was generally towards the northeast. The flow direction in the northwestern portion of the site was generally towards the northwest, and the flow direction in the area of Sebastopol Avenue was generally towards the south. The October 28, 2005 calculated gradients for 421 Santa Rosa Avenue ranged from approximately 0.009 to 0.047 foot per foot (ft/ft). The November 11, 2005 calculated gradients for 505 Santa Rosa Avenue ranged from approximately 0.003 to 0.010 foot per foot (ft/ft).

The measured depth to groundwater in the on-site and off-site monitoring wells and off-site Clearwater monitoring wells CMW-4 and CMW-5 have ranged from approximately 2.51 feet below the top of the well casing in December 2002 to approximately 11.45 feet bgs in October 2002. Groundwater flow directions calculated for the 505 Santa Rosa Avenue site have ranged from southwest to north-northwest. Groundwater flow directions calculated for the 421 Santa Rosa Avenue site have ranged from northeast to south. A summary of historical groundwater elevations and approximate flow directions is provided in Table 1.

### Groundwater Sampling

Monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 were sampled on November 11, 2005. The monitoring wells were sampled in accordance with the sampling protocol presented in Appendix A. The groundwater monitoring field reports and sampling logs are provided in Appendix B. The November 11, 2005 groundwater samples were analyzed by BACE Analytical & Field Services (BAFS), a California-certified laboratory, for TPH as gasoline, BTEX, petroleum oxygenates, and lead scavengers using EPA Test Method 8260. The analytical results for monitoring wells CMW-4 and CMW-5 were provided by Clearwater Group Environmental Services.



For the November 11, 2005 sampling event, TPH as gasoline was detected in the samples collected from monitoring wells MW-2, MW-3, and MW-5 at reported concentrations of 18, 5.6 and 25 mg/l, respectively (Table 2). The groundwater sample collected from well MW-2 reportedly contained BTEX at 77.6, 14.3, 982, and 2,270 µg/l, respectively. BTEX were also reported in the monitoring well MW-5 sample at concentrations of 1,490, 13.4, 2,760, and 1,020 µg/l, respectively. The November 2005 groundwater sample collected from well MW-3 contained ethylbenzene and xylenes at reported concentrations of 5.37 and 8.30 µg/l, respectively. None of the analytes tested were detected in the MW-1 and MW-4 groundwater samples. A summary of the groundwater analytical results is provided in Table 2 and the well construction details are provided in Table 3.

As indicated by the data provided by Clearwater Group Environmental Services, TPH as gasoline and BTEX were reported in the CMW-4 and CMW-5 groundwater samples. The groundwater sample collected from monitoring well CMW-4 contained TPH as gasoline at 11 mg/l and BTEX ranging from 32 to 1,200 µg/l. The groundwater sample collected from monitoring well CMW-5 contained TPH as gasoline at 2.4 mg/l and BTEX ranging from 2.4 to 10 µg/l. MTBE was also detected in the groundwater sample collected from well CMW-5 at a concentration of 0.56 µg/l. Furthermore, the Clearwater analytical results indicate groundwater samples collected from all remaining monitoring wells (CMW-1A, CMW-2A, CMW-6, CMW-7, CMW-8, CMW-9, CMW-10, and CMW-11) also contained petroleum hydrocarbon contamination. The highest concentration of TPH as gasoline reported in groundwater samples collected from the 421 Santa Rosa Avenue site was in the sample collected from monitoring well CMW-12, located in the southeastern area of the property. The complete analytical laboratory report for samples collected from monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 on November 11, 2005 is provided in Appendix C. The data provided by Clearwater is included in Appendix D.

### **Discussion and Recommendations**

The analytical results of the November 2005 groundwater sampling event indicate TPH as gasoline concentrations increased in well MW-2 and remained stable or decreased in wells MW-3 and MW-5 compared to the July 2005 analytical results. However, the BTEX concentrations reported in the November 2005 MW-2 and MW-5 groundwater samples increased compared to the July 2005 analytical results. The concentrations of ethylbenzene and xylenes reported in the November 2005 groundwater sample collected from well MW-3 also increased compared to the July 2005 analytical results. The analytical results for groundwater samples collected from monitoring well MW-1 were reported as non-detect for all analytes tested for the seventh consecutive quarter. No petroleum hydrocarbons have been reported in the MW-4 samples to date, with the exception of xylenes that were reported in September 2004.



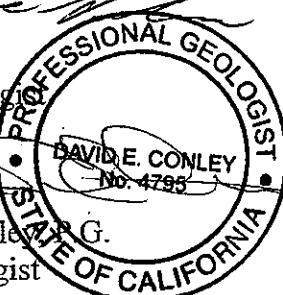
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## Schedule

The next quarterly groundwater monitoring event is tentatively scheduled for January 2006. During the January 2006 monitoring event, monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 will be sampled.

Should you have any questions regarding this report, please contact us at (707) 838-3027.

Sincerely,

  
Steve Silva  
Project Geologist  
  
David E. Conley  
Senior Geologist

cc: Ms. Virginia McNett, c/o McNett et al  
Ms. Rosemarie Henninger  
Mr. Gary Hursh  
Mr. John Groth  
Mr. Mark McCormick  
Mr. Jim Ho

## Attachments:

- Table 1 Groundwater Elevation Data
- Table 2 Groundwater Analytical Results
- Table 3 Well Construction Details
  
- Plate 1 Site Vicinity Map
- Plate 2 Site Map
- Plate 3 Groundwater Flow Map, October 28, 2005
- Plate 3 Groundwater Flow Map, November 11, 2005
  
- Appendix A Groundwater Sampling Protocol
- Appendix B Groundwater Sampling Field Forms and Logs
- Appendix C Analytical Laboratory Report
- Appendix D Clearwater Group Environmental Services Data



## **TABLES**





**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Measured	Top of Casing Elevation (feet, MSL)	Depth to Fluid/Air Interface (feet)	Depth to Product/Water Interface (feet)	Elevation of Groundwater Uncorrected (feet, MSL)	Floating Product Thickness (feet)	Correction for Free Product (Factor of 0.76) <sup>A</sup> (feet)	Hydraulic Potential <sup>B</sup> (feet, MSL)	Predominant Groundwater Flow Direction and Approximate Gradient (ft/ft)
MW-1	4/26/2002	158.49	5.94	5.94	152.55	0.00	0.00	152.55	Southwest 0.005
MW-2	4/26/2002	157.60	5.15	5.15	152.45	0.00	0.00	152.45	
MW-3	4/26/2002	158.49	5.64	5.64	152.85	0.00	0.00	152.85	
CMW-4	4/26/2002	156.91	NM						
CMW-5	4/26/2002	157.42	NM						
MW-1	5/6/2002	158.49	6.35	6.35	152.14	0.00	0.00	152.14	
MW-2	5/6/2002	157.60	5.53	5.53	152.07	0.00	0.00	152.07	
MW-3	5/6/2002	158.49	6.02	6.02	152.47	0.00	0.00	152.47	
CMW-4	5/6/2002	156.91	NM						
CMW-5	5/6/2002	157.42	NM						
MW-1	6/27/2002	158.49	8.09	8.09	150.40	0.00	0.00	150.40	
MW-2	6/27/2002	157.60	7.27	7.27	150.33	0.00	0.00	150.33	
MW-3	6/27/2002	158.49	7.75	7.75	150.74	0.00	0.00	150.74	
CMW-4	6/27/2002	156.91	7.09	7.09	149.82	0.00	0.00	149.82	
CMW-5	6/27/2002	157.42	6.95	6.95	150.47	0.00	0.00	150.47	
MW-1	7/30/2002	158.49	9.33	9.33	149.16	0.00	0.00	149.16	
MW-2	7/30/2002	157.60	8.47	8.47	149.13	0.00	0.00	149.13	
MW-3	7/30/2002	158.49	8.93	8.93	149.56	0.00	0.00	149.56	
CMW-4	7/30/2002	156.91	8.22	8.22	148.69	0.00	0.00	148.69	
CMW-5	7/30/2002	157.42	8.08	8.08	149.34	0.00	0.00	149.34	



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MW-1	8/16/2002	158.49	9.81	9.81	148.68	0.00	0.00	148.68	West-Southwest 0.005
MW-2	8/16/2002	157.60	8.96	8.96	148.64	0.00	0.00	148.64	Southwest 0.005
MW-3	8/16/2002	158.49	9.39	9.39	149.10	0.00	0.00	149.10	
CMW-4	8/16/2002	156.91	8.61	8.61	148.30	0.00	0.00	148.30	
CMW-5	8/16/2002	157.42	8.49	8.49	148.93	0.00	0.00	148.93	
MW-1	9/10/2002	158.49	10.35	10.35	148.14	0.00	0.00	148.14	Southwest 0.005
MW-2	9/10/2002	157.60	9.41	9.41	148.19	0.00	0.00	148.19	
MW-3	9/10/2002	158.49	9.82	9.82	148.67	0.00	0.00	148.67	
CMW-4	9/10/2002	156.91	9.05	9.05	147.86	0.00	0.00	147.86	
CMW-5	9/10/2002	157.42	8.89	8.89	148.53	0.00	0.00	148.53	
MW-1	10/30/2002	158.49	11.45	11.45	147.04	0.00	0.00	147.04	West-Southwest 0.005
MW-2	10/30/2002	157.60	10.52	10.52	147.08	0.00	0.00	147.08	
MW-3	10/30/2002	158.49	10.95	10.95	147.54	0.00	0.00	147.54	
CMW-4	10/30/2002	156.91	10.17 <sup>C</sup>	10.17	146.74	0.00	0.00	146.74	
CMW-5	10/30/2002	157.42	10.04 <sup>C</sup>	10.04	147.38	0.00	0.00	147.38	
MW-1	12/31/2002	158.49	2.93	2.93	155.56	0.00	0.00	155.56	West-Southwest 0.005
MW-2	12/31/2002	157.60	2.51	2.51	155.09	0.00	0.00	155.09	
MW-3	12/31/2002	158.49	3.10	3.10	155.39	0.00	0.00	155.39	
CMW-4	12/31/2002	156.91	2.54	2.54	154.37	0.00	0.00	154.37	
CMW-5	12/31/2002	157.42	2.51	2.51	154.91	0.00	0.00	154.91	



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MW-1	1/8/2003	158.49	4.19	4.19	154.30	0.00	0.00	154.30	505 SRA Northwest 0.007
MW-2	1/8/2003	157.60	3.52	3.52	154.08	0.00	0.00	154.08	
MW-3	1/8/2003	158.49	4.14	4.14	154.35	0.00	0.00	154.35	
CMW-1 <sup>C</sup>	1/8/2003	159.30	5.32	5.32	153.98	0.00	0.00	153.98	
CMW-2 <sup>C</sup>	1/8/2003	158.83	5.04	5.04	153.79	0.00	0.00	153.79	421 SRA Northwest 0.019
CMW-4 <sup>C</sup>	1/8/2003	156.91	3.44	3.44	153.47	0.00	0.00	153.47	
CMW-5 <sup>C</sup>	1/8/2003	157.42	3.35	3.35	154.07	0.00	0.00	154.07	
CMW-6 <sup>C</sup>	1/8/2003	158.95	4.97	4.97	153.98	0.00	0.00	153.98	
CMW-7 <sup>C</sup>	1/8/2003	159.58	7.26	7.26	152.32	0.00	0.00	152.32	
MW-1	2/7/2003	158.49	4.88	4.88	153.61	0.00	0.00	153.61	
MW-2	2/7/2003	157.60	4.13	4.13	153.47	0.00	0.00	153.47	
MW-3	2/7/2003	158.49	4.69	4.69	153.80	0.00	0.00	153.80	
CMW-4	2/7/2003	156.91	3.90	3.90	153.01	0.00	0.00	153.01	
CMW-5	2/7/2003	157.42	3.85	3.85	153.57	0.00	0.00	153.57	
MW-1	3/10/2003	158.49	5.45	5.45	153.04	0.00	0.00	153.04	
MW-2	3/10/2003	157.60	4.63	4.63	152.97	0.00	0.00	152.97	Northwest 0.006
MW-3	3/10/2003	158.49	5.16	5.16	153.33	0.00	0.00	153.33	
CMW-4	3/10/2003	156.91	4.40	4.40	152.51	0.00	0.00	152.51	
CMW-5	3/10/2003	157.42	4.38	4.38	153.04	0.00	0.00	153.04	

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MW-1	4/9/2003	158.49	5.27	5.27	153.22	0.00	0.00	153.22	505 SRA
MW-2	4/9/2003	157.60	4.43	4.43	153.17	0.00	0.00	153.17	North-Northwest
MW-3	4/9/2003	158.49	4.99	4.99	153.50	0.00	0.00	153.50	0.010
CMW-1 <sup>C</sup>	4/9/2003	159.30	6.40	6.40	152.90	0.00	0.00	152.90	
CMW-2 <sup>C</sup>	4/9/2003	158.83	6.40	6.40	152.43	0.00	0.00	152.43	
CMW-4 <sup>C</sup>	4/9/2003	156.91	4.30	4.30	152.61	0.00	0.00	152.61	421 SRA
CMW-5 <sup>C</sup>	4/9/2003	157.42	4.35	4.35	153.07	0.00	0.00	153.07	Northwest
CMW-6 <sup>C</sup>	4/9/2003	158.95	6.05	6.05	152.90	0.00	0.00	152.90	0.026
CMW-7 <sup>C</sup>	4/9/2003	159.58	8.85	8.85	150.73	0.00	0.00	150.73	
MW-1	7/9/2003	158.49	7.45	7.45	151.04	0.00	0.00	151.04	505 SRA
MW-2	7/9/2003	157.60	6.51	6.51	151.09	0.00	0.00	151.09	Northwest
MW-3	7/9/2003	158.49	7.15	7.15	151.34	0.00	0.00	151.34	0.009
CMW-1 <sup>C</sup>	7/9/2003	159.30	7.36	7.36	151.94	0.00	0.00	151.94	
CMW-2 <sup>C</sup>	7/9/2003	158.83	8.48	8.48	150.35	0.00	0.00	150.35	421 SRA
CMW-4 <sup>C</sup>	7/9/2003	156.91	6.47	6.47	150.48	0.00	0.00	150.48	Northwest
CMW-5 <sup>C</sup>	7/9/2003	157.42	6.45	6.45	150.97	0.00	0.00	150.97	0.042
CMW-6 <sup>C</sup>	7/9/2003	158.95	8.02	8.02	150.93	0.00	0.00	150.93	
CMW-7 <sup>C</sup>	7/9/2003	159.58	10.77	10.77	148.81	0.00	0.00	148.81	



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MW-1	10/9/2003	158.49	10.73	10.73	147.76	0.00	0.00	147.76	505 SRA
MW-2	10/9/2003	157.60	9.92	9.92	147.68	0.00	0.00	147.68	Northwest 0.008
MW-3	10/9/2003	158.49	10.31	10.31	148.18	0.00	0.00	148.18	
CMW-1A <sup>C</sup>	10/9/2003	159.30	11.22	11.22	148.08	0.00	0.00	148.08	
CMW-2A <sup>C</sup>	10/9/2003	158.83	11.66	11.66	147.17	0.00	0.00	147.17	421 SRA
CMW-4 <sup>C</sup>	10/9/2003	156.91	9.59	9.59	147.32	0.00	0.00	147.32	Northwest 0.023
CMW-5 <sup>C</sup>	10/9/2003	157.42	9.60	9.60	147.82	0.00	0.00	147.82	
CMW-6 <sup>C</sup>	10/9/2003	158.95	10.89	10.89	148.06	0.00	0.00	148.06	
CMW-7 <sup>C</sup>	10/9/2003	159.58	13.50	13.50	146.08	0.00	0.00	146.08	
MW-1	1/8/2004	158.49	3.75	3.75	154.74	0.00	0.00	154.74	505 SRA
MW-2	1/8/2004	157.60	3.18	3.18	154.42	0.00	0.00	154.42	North-northwest 0.097
MW-3	1/8/2004	158.49	3.85	3.85	154.64	0.00	0.00	154.64	
CMW-1A <sup>C</sup>	1/8/2004	159.30	5.00	5.00	154.30	0.00	0.00	154.30	
CMW-2A <sup>C</sup>	1/8/2004	158.83	5.30	5.30	153.53	0.00	0.00	153.53	421 SRA
CMW-4 <sup>C</sup>	1/8/2004	156.91	6.35	6.35	150.56	0.00	0.00	150.56	West 0.026
CMW-5 <sup>C</sup>	1/8/2004	157.42	6.20	6.20	151.22	0.00	0.00	151.22	
CMW-6 <sup>C</sup>	1/8/2004	158.95	4.50	4.50	154.45	0.00	0.00	154.45	
CMW-7 <sup>C</sup>	1/8/2004	159.58	7.36	7.36	152.22	0.00	0.00	152.22	

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MW-1	3/30/2004	158.49	5.14	5.14	153.35	0.00	0.00	153.35	505 SRA
MW-2	3/30/2004	157.60	4.33	4.33	153.27	0.00	0.00	153.27	Northwest
MW-3	3/30/2004	158.49	4.90	4.90	153.59	0.00	0.00	153.59	to Southwest
MW-4	3/30/2004	156.49	4.35	4.35	152.14	0.00	0.00	152.14	0.007 to 0.008
MW-5	3/30/2004	156.77	4.17	4.17	152.60	0.00	0.00	152.60	
CMW-1A <sup>C</sup>	3/30/2004	159.30	NM						
CMW-2A <sup>C</sup>	3/30/2004	158.83	NM						
CMW-4	3/30/2004	156.91	4.10	4.10	152.81	0.00	0.00	152.81	
CMW-5	3/30/2004	157.42	4.19	4.18	153.24	0.00	0.00	153.24	
CMW-6 <sup>C</sup>	3/30/2004	158.95	NM						
CMW-7 <sup>C</sup>	3/30/2004	159.58	NM						
MW-1	4/9/2004	158.49	5.85	5.85	152.64	0.00	0.00	152.64	505 SRA
MW-2	4/9/2004	157.60	5.05	5.05	152.55	0.00	0.00	152.55	Northwest
MW-3	4/9/2004	158.49	5.52	5.52	152.97	0.00	0.00	152.97	to Southwest
MW-4	4/9/2004	156.49	5.07	5.07	151.42	0.00	0.00	151.42	0.005 to 0.011
MW-5	4/9/2004	156.77	4.99	4.99	151.78	0.00	0.00	151.78	
CMW-1A <sup>C</sup>	4/9/2004	159.30	6.62	6.62	152.68	0.00	0.00	152.68	421 SRA
CMW-2A <sup>C</sup>	4/9/2004	158.83	6.63	6.63	152.20	0.00	0.00	152.20	
CMW-4 <sup>C</sup>	4/9/2004	156.91	5.06	5.06	151.85	0.00	0.00	151.85	North-northwest
CMW-5 <sup>C</sup>	4/9/2004	157.42	4.98	4.98	152.44	0.00	0.00	152.44	to Southwest
CMW-6 <sup>C</sup>	4/9/2004	158.95	6.42	6.42	152.53	0.00	0.00	152.53	0.006
CMW-7 <sup>C</sup>	4/9/2004	159.58	NM						

**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Measured	Top of Casing Elevation (feet, MSL)	Depth to Fluid/Air Interface (feet)	Depth to Product/Water Interface (feet)	Elevation of Groundwater Uncorrected (feet, MSL)	Floating Product Thickness (feet)	Correction for Free Product (Factor of 0.76) <sup>A</sup> (feet)	Hydraulic Potential <sup>B</sup> (feet, MSL)	Predominant Groundwater Flow Direction and Approximate Gradient (ft/ft)
MW-1	7/9/2004	158.49	9.37	9.37	149.12	0.00	0.00	149.12	505 SRA
MW-2	7/9/2004	157.60	8.51	8.51	149.09	0.00	0.00	149.09	Northwest
MW-3	7/9/2004	158.49	9.06	9.06	149.43	0.00	0.00	149.43	0.011
MW-4	7/9/2004	156.49	7.84	7.84	148.65	0.00	0.00	148.65	
MW-5	7/9/2004	156.77	8.55	8.55	148.22	0.00	0.00	148.22	
CMW-4 <sup>D</sup>	7/9/2004	156.91	8.36	8.36	148.55	0.00	0.00	148.55	
CMW-5 <sup>D</sup>	7/9/2004	157.42	8.37	8.37	149.05	0.00	0.00	149.05	
CMW-1A <sup>E</sup>	6/24/2004	159.30	10.05	10.05	149.25	0.00	0.00	149.25	421 SRA
CMW-2A <sup>E</sup>	6/24/2004	158.83	NM	NM					Not Calculated
CMW-4 <sup>E</sup>	6/24/2004	156.91	7.75	7.75	149.16	0.00	0.00	149.16	
CMW-5 <sup>E</sup>	6/24/2004	157.42	7.85	7.85	149.57	0.00	0.00	149.57	
CMW-6 <sup>E</sup>	6/24/2004	158.95	9.33	9.33	149.62	0.00	0.00	149.62	
CMW-7 <sup>E</sup>	6/24/2004	159.58	11.91	11.91	147.67	0.00	0.00	147.67	
MW-1	9/16/2004	158.49	11.05	11.05	147.44	0.00	0.00	147.44	505 SRA
MW-2	9/16/2004	157.60	10.31	10.31	147.29	0.00	0.00	147.29	Northwest
MW-3	9/16/2004	158.49	10.63	10.63	147.86	0.00	0.00	147.86	to West
MW-4	9/16/2004	156.49	9.53	9.53	146.96	0.00	0.00	146.96	0.009
MW-5	9/16/2004	156.77	10.13	10.13	146.64	0.00	0.00	146.64	
CMW-1A <sup>E</sup>	9/16/2004	159.30	11.67 <sup>F</sup>	11.67 <sup>F</sup>	147.63	0.00	0.00	147.63	
CMW-2A <sup>E</sup>	9/16/2004	158.83	12.07 <sup>F</sup>	12.07 <sup>F</sup>	146.76	0.00	0.00	146.76	421 SRA
CMW-4 <sup>E</sup>	9/16/2004	156.91	9.94 <sup>F</sup>	9.94 <sup>F</sup>	146.97	0.00	0.00	146.97	Northwest
CMW-5 <sup>E</sup>	9/16/2004	157.42	9.91 <sup>F</sup>	9.91 <sup>F</sup>	147.51	0.00	0.00	147.51	to West
CMW-6 <sup>E</sup>	9/16/2004	158.95	11.18 <sup>F</sup>	11.18 <sup>F</sup>	147.77	0.00	0.00	147.77	0.023
CMW-7 <sup>E</sup>	9/16/2004	159.58	13.87 <sup>F</sup>	13.87 <sup>F</sup>	145.71	0.00	0.00	145.71	





**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Measured	Top of Casing Elevation (feet, MSL)	Depth to Fluid/Air Interface (feet)	Depth to Product/Water Interface (feet)	Elevation of Groundwater Uncorrected (feet, MSL)	Floating Product Thickness (feet)	Correction for Free Product (Factor of 0.76) <sup>A</sup> (feet)	Hydraulic Potential <sup>B</sup> (feet, MSL)	Predominant Groundwater Flow Direction and Approximate Gradient (ft/ft)
MW-1	1/13/2005	158.49	3.40	3.40	155.09	0.00	0.00	155.09	505 SRA
MW-2	1/13/2005	157.60	2.93	2.93	154.67	0.00	0.00	154.67	Northwest
MW-3	1/13/2005	158.49	3.67	3.67	154.82	0.00	0.00	154.82	0.018
MW-4	1/13/2005	156.49	3.31	3.31	153.18	0.00	0.00	153.18	
MW-5	1/13/2005	156.77	3.40	3.40	153.37	0.00	0.00	153.37	
CMW-1A <sup>D</sup>	1/13/2005	159.30	4.91	4.91	154.39	0.00	0.00	154.39	421 SRA
CMW-2A <sup>D</sup>	1/13/2005	158.83	4.92	4.92	153.91	0.00	0.00	153.91	North
CMW-4 <sup>D</sup>	1/16/2005	156.91	2.98	2.98	153.93	0.00	0.00	153.93	to West
CMW-5 <sup>D</sup>	1/13/2005	157.42	3.20	3.20	154.22	0.00	0.00	154.22	0.013 to 0.018
CMW-6 <sup>D</sup>	1/13/2005	158.95	4.28	4.28	154.67	0.00	0.00	154.67	
CMW-7 <sup>D</sup>	1/13/2005	159.58	6.63	6.63	152.95	0.00	0.00	152.95	
MW-1	4/13/2005	158.49	4.39	4.39	154.10	0.00	0.00	154.10	505 SRA
MW-2	4/13/2005	157.60	3.76	3.76	153.84	0.00	0.00	153.84	Northwest
MW-3	4/13/2005	158.49	4.35	4.35	154.14	0.00	0.00	154.14	to southwest
MW-4	4/13/2005	156.49	4.12	4.12	152.37	0.00	0.00	152.37	0.011
MW-5	4/13/2005	156.77	3.74	3.74	153.03	0.00	0.00	153.03	
CMW-1A <sup>E</sup>	4/13/2005	159.30	5.73	5.73	153.57	0.00	0.00	153.57	421 SRA
CMW-2A <sup>E</sup>	4/13/2005	158.83	5.21	5.21	153.62	0.00	0.00	153.62	Northwest
CMW-4 <sup>E</sup>	4/13/2005	156.91	3.67	3.67	153.24	0.00	0.00	153.24	
CMW-5 <sup>E</sup>	4/13/2005	157.42	3.74	3.74	153.68	0.00	0.00	153.68	to southwest
CMW-6 <sup>E</sup>	4/13/2005	158.95	5.36	-	153.59	0.00	0.00	153.59	0.020
CMW-7 <sup>E</sup>	4/13/2005	159.58	7.74	7.74	151.84	0.00	0.00	151.84	



**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Measured	Top of Casing Elevation (feet, MSL)	Depth to Fluid/Air Interface (feet)	Elevation of Product/Water Interface (feet)	Uncorrected (feet, MSL)	Floating Product Thickness (feet)	Correction for Free Product (Factor of 0.76) <sup>A</sup> (feet)	Hydraulic Potential <sup>B</sup> (feet, MSL)	Predominant Groundwater Flow Direction and Approximate Gradient (ft/ft)
MW-1	7/13/2005	158.49	6.84	6.84	151.65	0.00	0.00	151.65	505 SRA
MW-2	7/13/2005	157.60	6.02	6.02	151.58	0.00	0.00	151.58	Northwest
MW-3	7/13/2005	158.49	6.54	6.54	151.95	0.00	0.00	151.95	0.005 to 0.009
MW-4	7/13/2005	156.49	5.59	5.59	150.90	0.00	0.00	150.90	
MW-5	7/13/2005	156.77	6.06	6.06	150.71	0.00	0.00	150.71	
CMW-1A <sup>C</sup>	7/13/2005	159.30	7.79	7.79	151.51	0.00	0.00	151.51	421 SRA
CMW-2A <sup>C</sup>	7/13/2005	158.83	7.67	7.67	151.16	0.00	0.00	151.16	Northwest
CMW-4 <sup>C</sup>	7/13/2005	156.91	5.81	5.81	151.10	0.00	0.00	151.10	0.022
CMW-5 <sup>C</sup>	7/13/2005	157.42	5.82	5.82	151.60	0.00	0.00	151.60	
CMW-6 <sup>C</sup>	7/13/2005	158.95	7.35	7.35	151.60	0.00	0.00	151.60	
CMW-7 <sup>C</sup>	7/13/2005	159.58	9.98	9.98	149.60	0.00	0.00	149.60	



**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Measured	Top of Casing Elevation (feet, MSL)	Depth to Fluid/Air Interface (feet)	Depth to Product/Water Interface (feet)	Elevation of Groundwater Uncorrected (feet, MSL)	Floating Product Thickness (feet)	Correction for Free Product (Factor of 0.76) <sup>A</sup> (feet)	Hydraulic Potential <sup>B</sup> (feet, MSL)	Predominant Groundwater Flow Direction and Approximate Gradient (ft/ft)
MW-1	11/11/2005	158.49	9.30		149.19	0.00	0.00	149.19	505 SRA
MW-2	11/11/2005	157.60	8.43	8.43	149.17	0.00	0.00	149.17	Northwest
MW-3	11/11/2005	158.49	8.89	8.89	149.60	0.00	0.00	149.60	to Southwest
MW-4	11/11/2005	156.49	8.05		148.44	0.00	0.00	148.44	
MW-5	11/11/2005	156.77	8.00	8.00	148.77	0.00	0.00	148.77	0.003 to 0.010
CMW-4	11/11/2005	156.91	8.19	8.19	148.72	0.00	0.00	148.72	
CMW-5	11/11/2005	157.42	8.06	8.06	149.36	0.00	0.00	149.36	
CMW-1A <sup>C</sup>	10/28/2005	159.30	11.01	11.01	148.29	0.00	0.00	148.29	421 SRA
CMW-2A <sup>C</sup>	10/28/2005	158.83	11.18	11.18	147.65	0.00	0.00	147.65	Northeast, Northwest
CMW-4C	10/28/2005	156.91	9.05	9.05	147.86	0.00	0.00	147.86	
CMW-5C	10/28/2005	157.42	8.97	8.97	148.45	0.00	0.00	148.45	
CMW-6C	10/28/2005	158.95	12.15	12.15	146.80	0.00	0.00	146.80	
CMW-7C	10/28/2005	159.58	12.96	12.96	146.62	0.00	0.00	146.62	
CMW-8C	10/28/2005	159.29	12.82	12.82	146.47	0.00	0.00	146.47	
CMW-9C	10/28/2005	158.69	12.33	12.33	146.36	0.00	0.00	146.36	
CMW-10C	10/28/2005	159.44	12.86	12.86	146.58	0.00	0.00	146.58	
CMW-11C	10/28/2005	158.26	9.42	9.42	148.84	0.00	0.00	148.84	
CMW-12C	10/28/2005	158.46	10.27	10.27	148.19	0.00	0.00	148.19	



**TABLE 1**  
**Groundwater Elevation Data**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Footnotes:

MSL = mean sea level

ft/ft = foot per foot

SRA = Santa Rosa Avenue

NM = not measured

A = Factor is equal to the density of gasoline (0.76 grams per cubic centimeter) divided by the density of groundwater (0.998 grams per cubic centimeter), as measured at the site.

B = Hydraulic potential is equal to the floating product thickness times the correction factor (0.76), plus the elevation of groundwater uncorrected.

C = Data provided by Clearwater Group Environmental Services (Clearwater)

D = Data collected by Brunising Associates, Inc.

E = Data provided electronically by Clearwater Group Environmental Services

F = Depth to groundwater for CMW wells corrected by subtracting 1.1 foot from measurement provided by Clearwater

(see text in the BAI document "Groundwater Monitoring Report, September 2004", dated November 30, 2004)

Wells CMW-1 through CMW-7 are part of investigation at 421 Santa Rosa Avenue



**TABLE 2**  
**Groundwater Analytical Results**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Sampled	TPH as Gasoline (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE <sup>a</sup> (µg/l)	Depth to Water (feet)
MW-1	4/26/2002	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	5.94
MW-1	7/30/2002	< 0.05	< 0.50	< 0.50	1.57	< 0.50	< 1.0	9.33
MW-1	11/5/2002	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	11.45
MW-1	1/8/2003	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	4.19
MW-1	4/9/2003	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	5.27
MW-1	7/9/2003	< 0.050	< 0.50	< 0.50	2.30	< 0.50	< 1.0	7.45
MW-1	10/9/2003	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	10.73
MW-1 <sup>c</sup>	1/8/2004	< 0.050	< 0.30	< 0.30	0.73	< 0.50	< 0.50	3.75
MW-1	3/30/2004	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	5.14
MW-1	7/9/2004	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	9.37
MW-1	9/16/2004	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	11.05
MW-1	1/13/2005	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	3.40
MW-1	4/13/2005	< 0.050	< 0.30	< 0.30	< 0.50	< 0.50	< 0.50	4.39
MW-1	7/13/2005	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	6.84
MW-1	11/11/2005	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	9.30
MW-2	4/26/2002	33	186	72.5	1,100	6,680	< 50	5.15
MW-2	7/30/2002	36	134	< 50	1,170	5,010	< 100	8.47
MW-2	11/5/2002	21	71.7	18.6	1,280	3,460	< 20	10.53
MW-2	1/8/2003	20	159	21.3	538	4,240	< 20	3.52
MW-2	4/9/2003	14	125	19.8	607	2,590	< 20	4.43
MW-2	7/9/2003	19	130	26.3	921	3,130	< 20	6.51
MW-2	10/9/2003	23	64.6	15.2	1,220	3,900	< 20	9.92



**TABLE 2**  
**Groundwater Analytical Results**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Sampled	TPH as Gasoline (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE <sup>A</sup> (µg/l)	Depth to Water (feet)
MW-2 <sup>C</sup>	1/8/2004	< 0.050	170	32	400	4,500	< 50	3.18
MW-2	3/30/2004	11	87.3	15.3	380	2,970	< 20	4.33
MW-2	7/9/2004	13	65.7	11.5	1,140	2,950	< 20	8.51
MW-2	9/16/2004	8.1	43.7	< 10	705	1,650	< 20	10.31
MW-2	1/13/2005	11	88.6	< 10	590	3,100	< 20	2.93
MW-2	4/13/2005	28	110	< 30	1,000	3,400	< 50	3.76
MW-2	7/13/2005	13	53.1	< 10	485	1,030	< 20	6.02
MW-2	11/11/2005	18	77.6	14.3	982	2,270	< 20	8.43
MW-3	4/26/2002	8.3	< 25	< 25	< 25	25.3	< 50	5.64
MW-3	7/30/2002	17	< 50	< 50	< 50	< 50	< 100	8.93
MW-3	11/5/2002	24	< 10	< 10	< 10	85.3	< 20	10.95
MW-3	1/8/2003	5.3	< 10	< 10	< 10	34.8	< 20	4.14
MW-3	7/9/2003	5.2	< 5.0	< 5.0	6.67	25.2	< 10	7.15
MW-3	10/9/2003	7.5	< 5.0	< 5.0	< 5.0	< 5.0	< 10	10.31
MW-3 <sup>C</sup>	1/8/2004	22	180	34	540	5,200	< 50	3.85
MW-3	3/30/2004	3.0	< 5.0	< 5.0	< 5.0	19.6	< 10	4.90
MW-3	7/9/2004	3.4	< 5.0	< 5.0	7.47	18.2	< 10	9.06
MW-3	9/16/2004	4.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	10.63
MW-3	1/13/2005	1.4	< 5.0	< 5.0	< 5.0	9.36	< 10	3.67
MW-3	4/13/2005	2.1	< 0.30	< 0.30	< 0.50	< 0.50	< 0.50	4.35
MW-3	7/13/2005	5.5	< 5.0	< 5.0	< 5.0	< 5.0	< 10	6.54
MW-3	11/11/2005	5.6	< 5.0	< 5.0	5.37	8.30	< 10	8.89



**TABLE 2**  
**Groundwater Analytical Results**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**

Well Number	Date Sampled	TPH as Gasoline (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE A (µg/l)	Depth to Water (feet)
MW-4	3/30/2004	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	4.35
MW-4	7/9/2004	< 0.050	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0 <sup>D</sup>	7.84
MW-4	9/16/2004	< 0.050	< 0.50	< 0.50	< 0.50	0.77	< 1.0 <sup>E</sup>	9.53
MW-4	1/13/2005	< 0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	3.31
MW-4	4/13/2005	< 0.050	< 0.30	< 0.30	< 0.50	< 0.50	< 0.50 <sup>H</sup>	4.12
MW-4	7/13/2005	< 0.05	< 0.50	< 0.530	< 0.50	< 0.50	< 1.0	5.59
MW-4	11/11/2005	< 0.05	< 0.50	< 0.530	< 0.50	< 0.50	< 1.0	8.05
MW-5	3/30/2004	25	1,170	< 50	2,660	4,080	< 100	4.17
MW-5	7/9/2004	53	3,650	< 50	6,100	4,140	< 100	8.55
MW-5	9/16/2004	28	2,520	< 50	4,710	2,990	< 100	10.13
MW-5	1/13/2005	9.7	755	< 50	1,350	524	< 100	3.40
MW-5	4/13/2005	46	1,700	< 30	4,600	1,100	< 50	3.74
MW-5	7/13/2005	36	1,400	< 10	2,720	547	< 20	6.06
MW-5	11/11/2005	25	1,490	13.4	2,760	1,020	< 20	8.00
CMW-4 <sup>B</sup>	4/26/2002	14	1,400	200	450	1,000	0.95	5.03
CMW-4 <sup>B</sup>	7/30/2002	16	2,800	180	390	1,100	0.1	8.26
CMW-4 <sup>B</sup>	11/5/2002	12	2,700	45	150	87	< 10	10.17
CMW-4 <sup>B</sup>	1/8/2003	3.9	570	47	120	240	< 2.5	3.44
CMW-4 <sup>B</sup>	4/9/2003	12	1,100	95	290	460	< 5.0	4.30
CMW-4 <sup>B</sup>	7/9/2003	14	1,600	93	290	480	< 10	6.47
CMW-4 <sup>B</sup>	10/9/2003	12	2,300	49	180	170	< 5.0	9.59

**TABLE 2**  
**Groundwater Analytical Results**  
**505 Santa Rosa Avenue**  
**Santa Rosa, California**



Well Number	Date Sampled	TPH as Gasoline (mg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE <sup>A</sup> (µg/l)	Depth to Water (feet)
CMW-4 <sup>B</sup>	1/8/2004	4.4	570	39	120	210	< 3.0	6.35
CMW-4 <sup>B</sup>	4/9/2004	11	1,700	97	270	500	< 2.5	5.06
CMW-4 <sup>B</sup>	6/24/2004	8.5	1,500	52	160	220	< 5.0	7.75
CMW-4 <sup>B</sup>	9/16/2004	8.5	1,700	28	79	68	< 5.0 <sup>G</sup>	9.94 <sup>F</sup>
CMW-4 <sup>B</sup>	1/13/2005	2.9	330	17	60	88	1.4	2.98
CMW-4 <sup>B</sup>	4/13/2005	4.1	680	34	85	71	1.3	3.67
CMW-4 <sup>B</sup>	7/13/2005	11	960	38	220	140	< 1.5	5.81
CMW-4 <sup>B</sup>	10/28/2005	11	1,200	32	99	82	< 2.5	9.05
CMW-5 <sup>B</sup>	4/26/2002	6.5	16	29	160	530	< 2.0	4.93
CMW-5 <sup>B</sup>	7/30/2002	4.3	38	10	120	250	< 1.0	8.13
CMW-5 <sup>B</sup>	11/5/2002	3.8	130	8.4	60	80	0.81	10.04
CMW-5 <sup>B</sup>	1/8/2003	6.0	9.8	24	130	410	< 1.0	3.35
CMW-5 <sup>B</sup>	4/9/2003	12	< 5.0	24	310	1,000	< 5.0	4.35
CMW-5 <sup>B</sup>	7/9/2003	3.2	31	5.9	35	50	< 0.50	6.45
CMW-5 <sup>B</sup>	10/9/2003	3.1	40	4.6	22	36	0.90	9.60
CMW-5 <sup>B</sup>	1/8/2004	4.6	4	12.0	100	270	0.51	6.20
CMW-5 <sup>B</sup>	4/9/2004	3.7	8.2	5.3	22	34	0.53	4.98
CMW-5 <sup>B</sup>	6/24/2004	3.9	14.0	4.2	44	85	0.86	7.85
CMW-5 <sup>B</sup>	9/16/2004	2.3	19.0	2.4	8	12	0.97 <sup>G</sup>	9.91 <sup>F</sup>
CMW-5 <sup>B</sup>	1/13/2005	2.4	0.5	2.8	32	68	< 0.50	3.20
CMW-5 <sup>B</sup>	4/13/2005	3.5	0.95	2.0	51	100	< 0.50	3.74
CMW-5 <sup>B</sup>	7/13/2005	7.4	2.0	5.1	140	220	< 0.50	5.82
CMW-5 <sup>B</sup>	10/28/2005	2.4	2.7	2.4	10	8.1	0.56	8.97



TABLE 2  
Groundwater Analytical Results  
505 Santa Rosa Avenue  
Santa Rosa, California

NOTES:

mg/l = milligrams per liter

µg/l = micrograms per liter

Less than symbol (<) indicates not detected at given laboratory reporting limit

A = Sample analyzed for petroleum oxygenates and lead scavengers using EPA Test Method 8260B with the exception of samples collected from wells CMW-4 and CMW-5. All analytes detected are listed.

B = Data for wells CMW-4 and CMW-5 provided by Clearwater Group Environmental Services.

C = Reported analytical results for groundwater samples collected on 1/8/2004 from wells MW-1, MW-2, and MW-3 may not be accurate due to possible mislabeling and/or sample carryover

D = Di-isopropyl ether (DIPE) reported at 1.50 µg/l

E = Di-isopropyl ether (DIPE) reported at 2.23 µg/l

F = Depth to groundwater for CMW wells corrected by 1.1 foot

(see text in the BAI document "Groundwater Monitoring Report, September 2004", dated November 12, 2004)

G = Clearwater September 2004 groundwater samples analyzed for petroleum oxygenates and lead scavengers using EPA Test Method 8260

H = Di-isopropyl ether (DIPE) reported at 2.4 µg/l



TABLE 3  
Well Construction Details  
505 Santa Rosa Avenue  
Santa Rosa, California

Well Number	Date Installed	Installed by	Borehole Diameter (inches)	Total Borehole Depth (feet, bgs)	Screened Interval (feet, bgs)	Total Well Depth (feet, bgs)	Casing Diameter (inches)	Screen Slot Size (inches)	PVC Casing Elevation (feet, MSL)	Existing or Abandoned
MW-1	4/15/2002	BAI	8	20	5 to 20	20	2	0.010	158.49	Existing
MW-2	4/15/2002	BAI	8	20	5 to 20	20	2	0.010	157.60	Existing
MW-3	4/15/2002	BAI	8	20	5 to 20	20	2	0.010	158.49	Existing
MW-4	3/16/2004	BAI	8	15	5 to 15	15	2	0.010	156.49	Existing
MW-5	3/16/2004	BAI	8	15	5 to 15	15	2	0.010	156.77	Existing

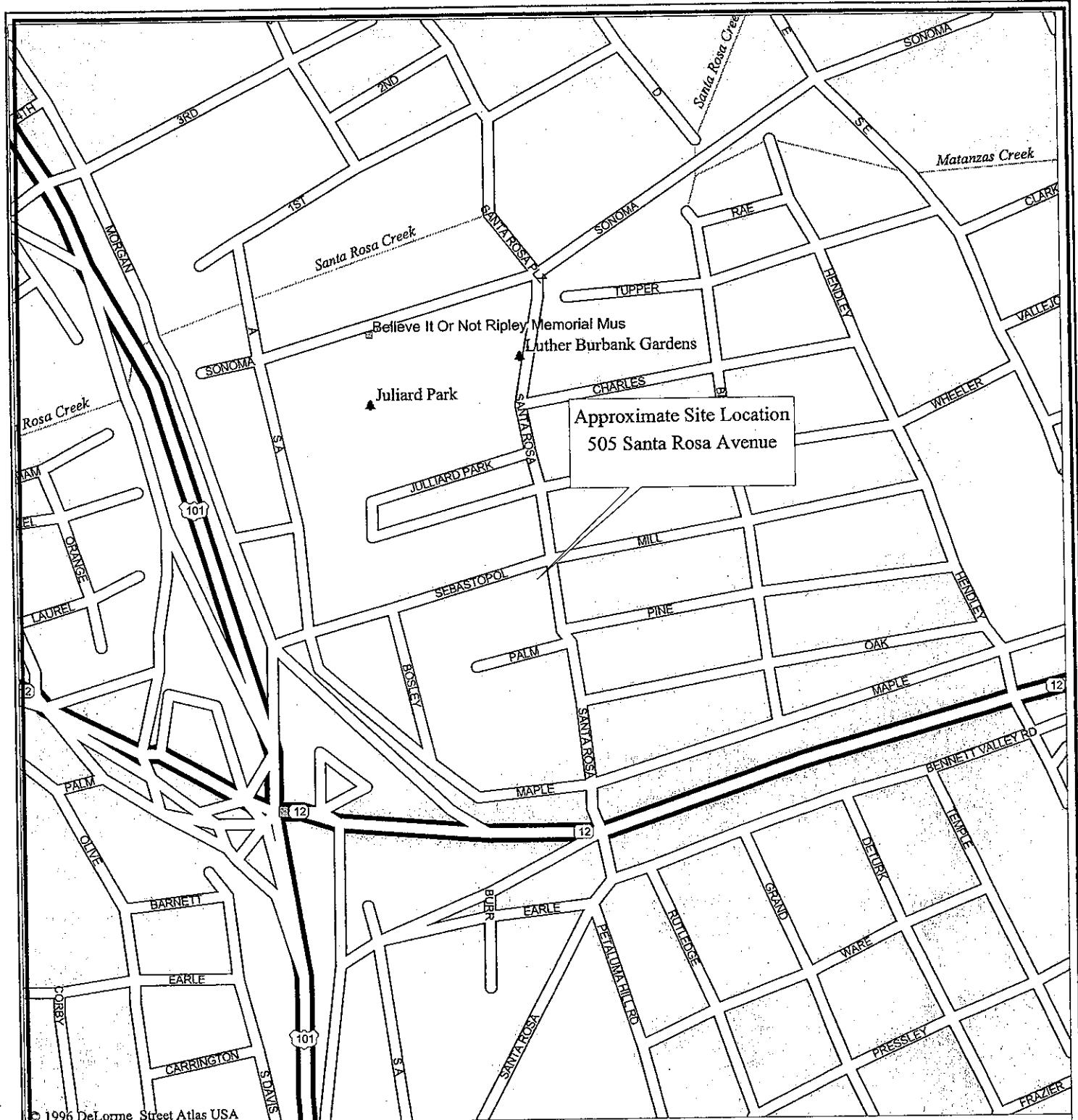
BAI = Brunsing Associates, Inc.

MSL = mean sea level

bgs = below ground surface

## **PLATES**





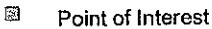
Mag 16.00

Fri Feb 20 13:34 2004

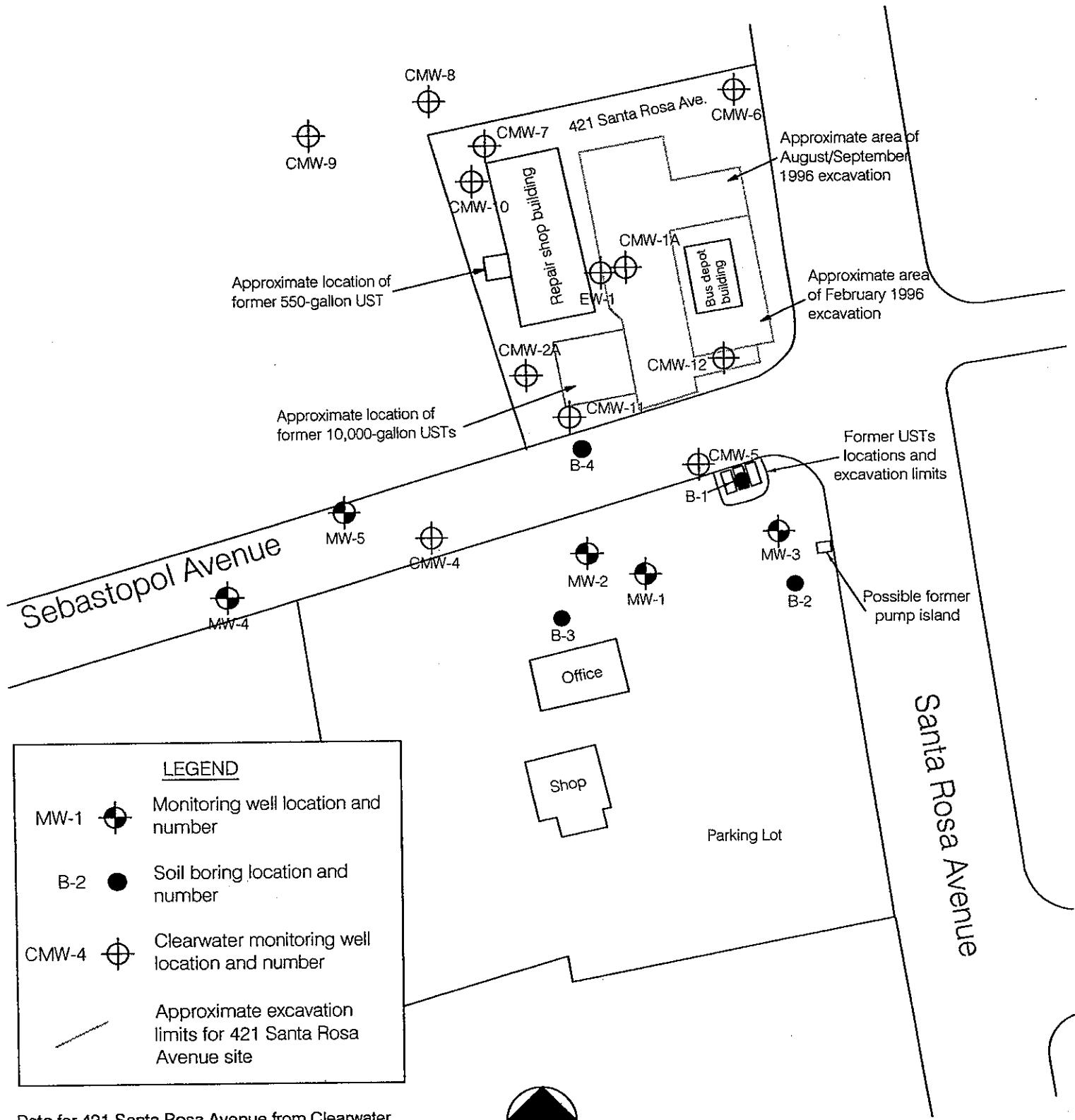
Scale 1:6,250 (at center)

500 Feet

200 Meters



PROJECT NO.: 691			<p style="text-align: center;"><b>Brunsing Associates, Inc.</b>  <b>P.O. Box 588</b>  <b>Windsor, California 95492</b></p>	<p style="text-align: right;"><b>PLATE 1</b>  <b>Site Vicinity Map</b>  <b>505 Santa Rosa Avenue</b>  <b>Santa Rosa, California</b></p>
DRAWN BY:	SMS	2/20/04		
CHECKED BY:				
APPROVED BY:	Omp	7/6/04		
REVISED:				



Data for 421 Santa Rosa Avenue from Clearwater Group report dated September 20, 2005

Reference:

Ray Carlson & Associates, June 4, 2004



Brusing Associates, Inc.  
5468 Skylane Blvd., Suite 201  
Santa Rosa, California 95403  
Tel: (707) 838-3027

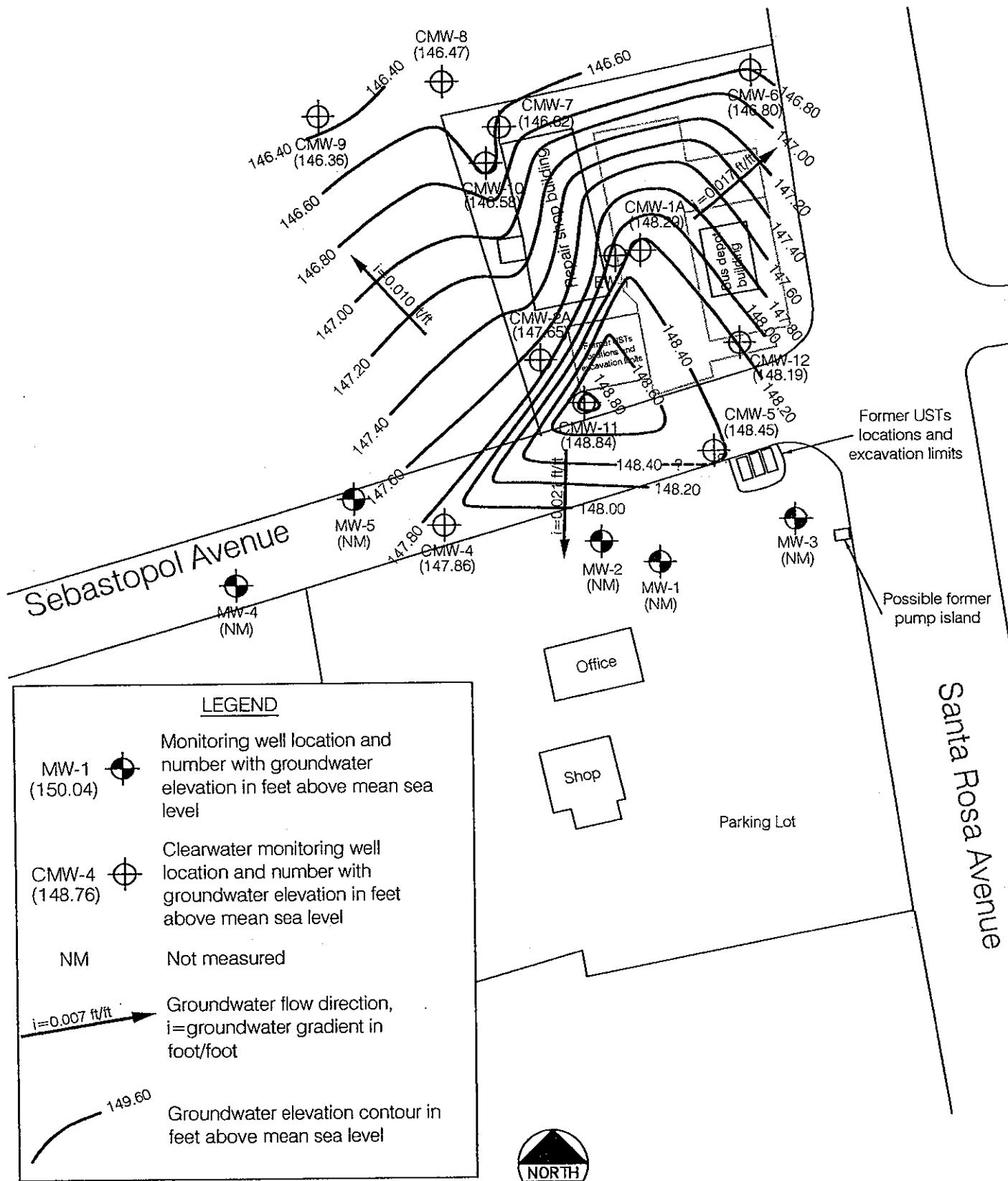
Job No.: 691

Appr.: *[Signature]*  
Date: 12/15/05

**SITE MAP**  
505 Santa Rosa Avenue  
Santa Rosa, California

PLATE

**2**



### **Reference:**

Clearwater well locations and data from  
Clearwater Environmental Services.

Ray Carlson & Associates, June 4, 2004



Brunsing Associates, Inc.  
5468 Skylane Blvd., Suite 201  
Santa Rosa, California 95403  
Tel: (707) 838-3027

Job No.: 691

Appr.:

Date: 12/15/05

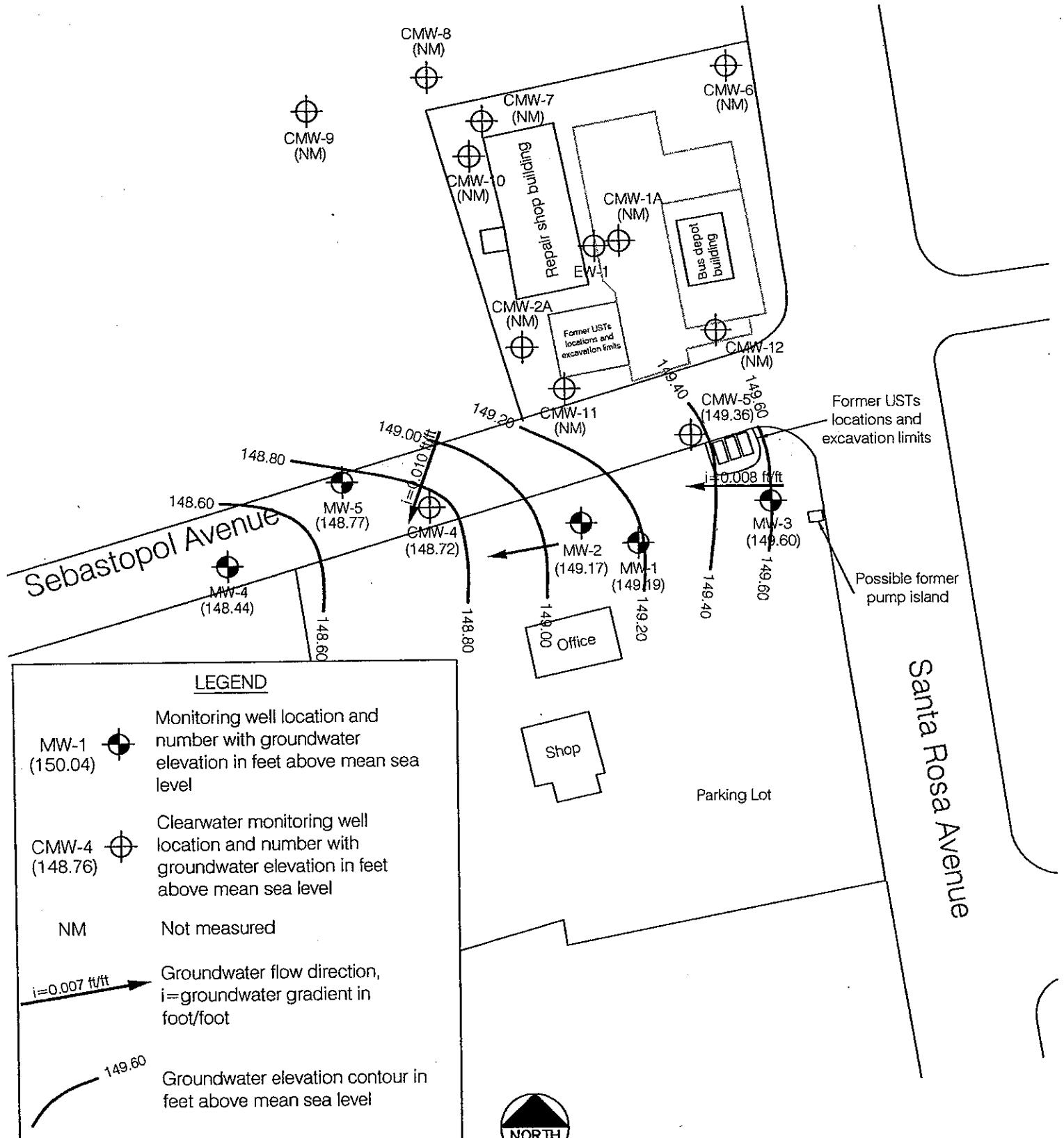
## GROUNDWATER FLOW MAP

OCTOBER 28, 2005

505 Santa Rosa Avenue  
Santa Rosa, California

PLATE

3



Reference:

Clearwater well locations and data from  
Clearwater Environmental Services.

Ray Carlson & Associates, June 4, 2004

APPROXIMATE SCALE (FEET)

0 30 60 120



Brsnsng Associates, Inc.  
5468 Skylane Blvd., Suite 201  
Santa Rosa, California 95403  
Tel: (707) 838-3027

Job No.: 691

Appr.:

Date: 12/15/05

#### GROUNDWATER FLOW MAP

NOVEMBER 11, 2005

505 Santa Rosa Avenue  
Santa Rosa, California

PLATE

4

## **APPENDIX A**

### **Groundwater Sampling Protocol**



## **Groundwater Sampling Protocol**

### **Monitoring Wells**

Prior to purging a monitoring well, groundwater levels are measured with a Solinst electric depth measurement device, or an interface probe, in all wells that are to be measured. At sites where petroleum hydrocarbons are possible contaminants, the well is checked for floating product using a clear bailer, a steel tape with water/oil paste, or an interface probe, during the initial sampling round. If floating product is measured during the initial sampling round or noted during subsequent sampling rounds, floating product measurements are continued.

After the water level and floating product measurements are complete, the monitoring well is purged until a minimum of three casing volumes of water are removed, water is relatively clear of sediment, and pH, conductivity, and temperature measurements of the water become relatively stable. If the well is purged dry, groundwater samples are collected after the water level in the well recovers to at least 80 percent of the original water column measured in the well prior to sampling, or following a maximum recovery period of two hours. The well is purged using a factory-sealed, disposable, polyethylene bailer, a four-inch diameter submersible Grundfos pump, a two-inch diameter ES-40 purge pump, or a peristaltic pump. The purge water is stored on-site in clean, 55-gallon drums.

A groundwater sample is collected from each monitoring well following re-equilibration of the well after purging. The groundwater sample is collected using a factory-sealed disposable, polyethylene bailer with a sampling port, or a factory-sealed Teflon bailed. A factory provided attachment designed for use with volatile organic compounds (VOCs) is attached to the polyethylene bailed sampling port when collecting samples to be analyzed for VOCs. The groundwater sample is transferred from the bailed into sample container(s) that are obtained directly from the analytical laboratory.

The sample container(s) is labeled with a self-adhesive tag. The following information is included on the tag:

- Project number
- Sample number
- Date and time sample is collected
- Initials of sample collector(s).



Individual log sheets are maintained throughout the sampling operations. The following information is recorded:

- Sample number
- Date and time well sampled and purged
- Sampling location
- Types of sampling equipment used
- Name of sampler(s)
- Volume of water purged.

Following collection of the groundwater sample, the sample is immediately stored on blue ice in an appropriate container. A chain-of-custody form is completed with the following information:

- Date the sample was collected
- Sample number and the number of containers
- Analyses required
- Remarks including preservatives added and any special conditions.

The original copy of the chain-of-custody form accompanies the sample containers to a California-certified laboratory. A copy is retained by BAI and placed in company files.

Sampling equipment including thermometers, pH electrodes, and conductivity probes are cleaned both before and after their use at the site. The following cleaning procedures are used:

- Wash with a potable water and detergent solution or other solutions deemed appropriate
- Rinse with potable water
- Double-rinse with organic-free or deionized water
- Package and seal equipment in plastic bags or other appropriate containers to prevent contact with solvents, dust, or other contaminants.

In addition, the pumps are cleaned by pumping a potable water and detergent solution and deionized water through the system. Cleaning solutions are contained on-site in clean 55-gallon drums.

### **Domestic and Irrigation Wells**

Groundwater samples collected from domestic or irrigation wells are collected from the spigot that is the closest to the well. Prior to collecting the sample, the spigot is allowed to flow for at least 5 minutes to purge the well. The sample is then collected directly into laboratory-supplied containers, sealed, labeled, and stored on blue ice in an appropriate container, as described above. A chain-of-custody form is completed and submitted with the samples to the analytical laboratory.



## **APPENDIX B**

### **Groundwater Sampling Field Forms and Logs**



UST       Yes  
 Fund Site:       No

## FIELD REPORT

PAGE 1 OF 7

JOB NO: 691 PROJECT: Groth Motors - 505 Santa Rosa Ave, Santa Rosa, CA  
 INITIAL: GDS SUBJECT: GROUNDWATER SAMPLING  
 DATE: 11-11-05 PROJECT PHASE NUMBER: 04  
 VEHICLE USED: FORD F-150

Total Time: 8.00End. Mileage: 72Beg. Mileage: 176154TOTAL MILEAGE: 18

TIME	DESCRIPTION OF WORK AND CONVERSATION RECORD
0633	LOAD EQUIPMENT AND SUPPLIES.
0713	TO SITE.
0733	ARRIVE AT SITE. SET-UP FOR GROUNDWATER SAMPLING MEASURED TWO ROUNDS OF DISTANCE TO WATER AT WELLS MW-1, MW-2, MW-3, MW-4, MW-5, CMW-4 AND CMW-5. PERFORMED SAMPLING AT WELLS MW-1, MW-2, MW-3, MW-4 AND MW-5. STORED PURGEWATER IN DRUM LOCATED NORTHWEST OF THE SHOP BUILDING.
	CLOSED WELLS AND MONUMENTS.
	DECON SAMPLING EQUIPMENT.
	LOAD EQUIPMENT AND SUPPLIES.
	COMPLETED FIELD NOTES AND LOADED SAMPLES ON CHAIN OF CUSTODY.
1328	LEAVESITE
1354	ARRIVE AT OFFICE; SUBMITTED SAMPLES FOR ANALYSIS.
	UNLOAD EQUIPMENT AND SUPPLIES.
1434	FINISHED WITH WORK.
	DRUM COUNT:
	Water = <u>4</u> Devlpmt Water =
	Soil =      Decon Water =



## WATER LEVELS

SHEET 2 OF 7

PROJECT: Groth Motors - 505 Santa Rosa Avenue, Santa Rosa, CA

PROJECT NUMBER: 691

INSTRUMENT TYPE: ET (WLF)

INITIALS: CDS

DATE: 11-11-05

**BRUNSWICK ASSOCIATES, INC.  
ENVIRONMENTAL DIVISION**

## WELL SAMPLING

SHEET 3 OF 7

## PROJECT: Groth

PROJECT NUMBER: 691.01

WELL# MW-1 PRECIP. IN LAST 5 DAYS: — WIND ✓

DATE: 11-1-05

STARTING TIME: 1058 FINISHING TIME: 1140

INITIALS: *CPS*

## **CALCULATION OF PURGE VOLUME**

2" WELL DEPTH: 20.00 - D.T.W. 9.30 = H2O COLUMN: 10.70 CONV.= 5.35

4" WELL DEPTH:  - D.T.W.  = H2O COLUMN:  CONV.=

THEREFORE TOTAL PURGE GALLONS EQUALS 2" WELL 5 4" WELL

## FIELD MEASUREMENTS

<u>TIME</u>	<u>GALLONS REMOVED</u>	<u>p H</u>	<u>CONDUCTIVITY</u>	<u>TEMP.</u>	<u>OBSERVATIONS</u>
1115	1	6.95	527	21.4	Cloudy Brown, no odor, sandy
1120	3	6.95	484	22.0	Turbid Brown, no odor, sandy
1124	5	6.96	470	21.8	Turbid Brown, no odor, sandy

SAMPLING.

#### SAMPLE ANALYSIS:

TPH-GAS

EPA-8260

**SAMPLE TIME:**

## DID WELL GO DRY?

**BRUNSWICK ASSOCIATES, INC.**  
**ENVIRONMENTAL DIVISION**

**WELL SAMPLING**

SHEET 4 OF 7

PROJECT: Groth

PROJECT NUMBER: 691.01

WELL# MW-2 PRECIP. IN LAST 5 DAYS: — WIND ✓

DATE: 11-11-05

STARTING TIME: 1141 FINISHING TIME: 1228

INITIALS: CPS

CALCULATION OF PURGE VOLUME

2" WELL DEPTH:  - D.T.W.  = H<sub>2</sub>O COLUMN:  CONV.=

GALLONS

4" WELL DEPTH:  - D.T.W.  = H<sub>2</sub>O COLUMN:  CONV.=

THEREFORE TOTAL PURGE GALLONS EQUALS 2" WELL  4" WELL

FIELD MEASUREMENTS

TIME	GALLONS REMOVED	pH	CONDUCTIVITY	TEMP.	OBSERVATIONS
1148	1	7.06	413	21.9	Cloudy grey, PHC odor, sandy
1153	3	7.01	410	22.0	Turbid grey-Brown, PHC odor, sheen, sandy
1157	6	7.02	408	22.0	Turbid green-Brown, PHC odor, sheen, sandy

SAMPLING:

SAMPLE ANALYSIS:

SAMPLE TIME:

DID WELL GO DRY?

WATER LEVELS:

NOTES:

TIME	D.T.W.
------	--------

1214

**BRUNSWICK ASSOCIATES, INC.  
ENVIRONMENTAL DIVISION**

## WELL SAMPLING

SHEET 5 OF 7

## PROJECT: Groth

PROJECT NUMBER: 691.01

WELL# MW-3 PRECIP. IN LAST 5 DAYS: - WIND ✓

DATE: 11-11-05

STARTING TIME: 1003 FINISHING TIME: 1057

INITIALS: GDS

## CALCULATION OF PURGE VOLUME

2" WELL DEPTH: 20.00 - D.T.W. 8.89 = H2O COLUMN: 11.11 CONV.= 5.56

4" WELL DEPTH:  - D.T.W.  = H2O COLUMN:  CONV.:

THEREFORE TOTAL PURGE GALLONS EQUALS 2" WELL 6 4" WELL

GALLONS

## FIELD MEASUREMENTS

TIME	GALLONS REMOVED	pH	CONDUCTIVITY	TEMP.	OBSERVATIONS
1019	1	7.07	303	21.8	TURBID GREEN-BROWN, PHODOR, SANDY
1024	3	7.05	294	21.7	TURBID GREEN-BROWN, PHODOR, SHEEN, SANDY
1030	6	7.12	286	21.5	TURBID GREEN-BROWN, PHODOR, SHEEN, SANDY

#### SAMPLING:

#### SAMPLE ANALYSIS:

TPH-GAS

EPA-8260

**SAMPLE TIME:**

DID WELL GO DRY?

No

#### WATER LEVELS:

## NOTES:

TIME

DTW

1648

1636

# WELL SAMPLING

SHEET 6 OF 7

PROJECT: Groth Motors - 505 Santa Rosa Avenue, Santa Rosa, CA

PROJECT NUMBER: 691

WELL # MW-4 PRECIP. IN LAST 5 DAYS: — WIND ✓

DATE: 11-11-05

STARTING TIME: 0827 FINISHING TIME: 0916

INITIALS: CDS

## CALCULATION OF PURGE VOLUME

2" WELL DEPTH: 15.00 - D.T.W. 8.05 = H2O COLUMN: 6.95 X 0.5 = 3.48 GALLONS

4" WELL DEPTH: [ ] - D.T.W. [ ] = H2O COLUMN: [ ] X 2.0 = [ ] GALLONS

THEREFORE TOTAL PURGE GALLONS EQUALS

[ ] 3

## FIELD MEASUREMENTS

TIME	GALLONS REMOVED	pH	CONDUCTIVITY	TEMP.	OBSERVATIONS
0845	1	6.95	466	19.1	Cloudy Brown, SEPTIC ODOR, SANDY
0847	2	6.98	452	20.5	Turbid Green-Brown, NO ODORE, SANDY
0849	3	7.05	445	21.2	Turbid Brown, NO ODORE, SANDY

SAMPLING:

SAMPLE ANALYSIS: TPH-Gas, 8260B (BTEX, pet oxy & Pb scav)

SAMPLE TIME: 0903

DID WELL GO DRY?

No

WATER LEVELS:		NOTES:
TIME	D.T.W.	
0908	12.27	

# WELL SAMPLING

SHEET 7 OF 7

PROJECT: Groth Motors - 505 Santa Rosa Avenue, Santa Rosa, CA

PROJECT NUMBER: 691

WELL # MW-5 PRECIP. IN LAST 5 DAYS: — WIND ✓

DATE: 11-11-05

STARTING TIME: 0917 FINISHING TIME: 1002

INITIALS: CPS

## CALCULATION OF PURGE VOLUME

2" WELL DEPTH: [15.00] - D.T.W. [8.00] = H2O COLUMN: [7.00] X 0.5 = [3.50]

4" WELL DEPTH: [ ] - D.T.W. [ ] = H2O COLUMN: [ ] X 2.0 = [ ]

GALLONS

THEREFORE TOTAL PURGE GALLONS EQUALS

[4]

## FIELD MEASUREMENTS

TIME	GALLONS REMOVED	pH	CONDUCTIVITY	TEMP.	OBSERVATIONS
0931	1	6.74	405	23.2	TURBID GREEN-BROWN, FLUORIDE, SANDY
0933	2.5	6.91	379	22.5	TURBID GREEN-BROWN, FLUORIDE, SANDY, SHEEN
0936	4	6.91	413	22.0	TURBID GREEN-BROWN, FLUORIDE, SANDY, SHEEN

SAMPLING: SAMPLE ANALYSIS: TPH-Gas, 8260B (BTEX, pet oxy & Pb scav)

SAMPLE TIME: [0948] DID WELL GO DRY? [No]

WATER LEVELS:		NOTES:
TIME	D.T.W.	
0951	13.11	

## **APPENDIX C**

### **Analytical Laboratory Report**



## Laboratory Report Project Overview

EDF-12a

Laboratory:  
Bace Analytical, Windsor, CA  
Lab Report Number:  
4689  
Project Name:  
505 SANTA ROSA AVE  
Work Order Number:  
691.070  
Control Sheet Number:  
NA

Bace Analytical, Windsor, CA

4689

505 SANTA ROSA AVE

691.070

NA

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anicode	Exicode	Logdate	Extdate	Anadate	Labidct!	Run Sub
4689	MW-1	4689-1	W	CS	8260FAB	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	18
4689	MW-1	4689-1	W	CS	8260TPH	SW5030B	5	5	5	5	5
4689	MW-2	4689-2	W	CS	8260FAB	SW5030B	5	5	5	5	18
4689	MW-2	4689-2	W	CS	8260TPH	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	19
4689	MW-3	4689-3	W	CS	8260FAB	SW5030B	5	5	5	5	5
4689	MW-3	4689-3	W	CS	8260TPH	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	19
4689	MW-4	4689-4	W	CS	8260FAB	SW5030B	5	5	5	5	5
4689	MW-4	4689-4	W	CS	8260TPH	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	20
4689	MW-5	4689-5	W	CS	8260FAB	SW5030B	5	5	5	5	5
4689	MW-5	4689-5	W	CS	8260TPH	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	21
4689	MW-5	4689-5	W	NC	8260FAB	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	23
4689	MW-5	4689-5	W	LB1	8260FAB	SW5030B	5	5	5	5	5
4689MS		4689MB	W	LB1	8260TPH	SW5030B	11/11/200	11/15/200	11/15/200	20051115C	23
4689MS		4689MB	W	MS1	8260FAB	SW5030B	/ /	11/15/200	11/15/200	20051115C	10
4689MS		4689MB	W	MS1	8260TPH	SW5030B	/ /	5	5	5	5
4689SD		4689MS	W	SD1	8260FAB	SW5030B	/ /	11/15/200	11/15/200	20051115C	15
4689SD		4689SD	W	SD1	8260TPH	SW5030B	/ /	11/15/200	11/15/200	20051115C	16

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

Page: 1

Project Name:	505 SANTA ROSA AVE	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Project No.:	691.070	Method:	8260FAB			
		Prep Meth:	SW5030B			
Field ID:	MW-1	Lab Samp ID:	4689-1			
Descr/Location:	MW-1	Rec'd Date:	11/15/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1133	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.38	1.0	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.30	1.0	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.26	1.0	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.37	1.0	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	2.4	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.30	0.50	PQL	ND	UG/L	1
1,2-Dibromoethane	0.30	0.50	PQL	ND	UG/L	1
Benzene	0.27	0.50	PQL	ND	UG/L	1
Toluene	0.25	0.50	PQL	ND	UG/L	1
Ethylbenzene	0.25	0.50	PQL	ND	UG/L	1
Xylenes	0.25	0.50	PQL	ND	UG/L	1
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		86-118	SLSA	96%		1
Toluene-d8		88-110	SLSA	97%		1
Dibromofluoromethane		86-115	SLSA	94%		1

Approved by:

*Wellman H. Potts*

Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

Page: 2

Project Name:	505 SANTA ROSA AVE	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Project No:	691.070	Method:	8260FAB			
		Prep Meth:	SW5030B			
Field ID:	MW-2	Lab Samp ID:	4689-2			
Descr/Location:	MW-2	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1209	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	7.6	20.	PQL	ND	UG/L	20
Ethyl tert-butyl ether (ETBE)	6.0	20.	PQL	ND	UG/L	20
tert-Amyl methyl ether (TAME)	5.2	20.	PQL	ND	UG/L	20
Di-isopropyl ether (DIPE)	7.4	20.	PQL	ND	UG/L	20
tert-Butyl alcohol (TBA)	48.	200.	PQL	ND	UG/L	20
1,2-Dichloroethane	6.0	10.	PQL	ND	UG/L	20
1,2-Dibromoethane	6.0	10.	PQL	ND	UG/L	20
Benzene	5.4	10.	PQL	77.6	UG/L	20
Toluene	5.0	10.	PQL	14.3	UG/L	20
Ethylbenzene	5.0	10.	PQL	982	UG/L	20
Xylenes	5.0	10.	PQL	2270.	UG/L	20
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-118	SLSA		95%		1
Toluene-d8	88-110	SLSA		98%		1
Dibromofluoromethane	86-115	SLSA		94%		1

Approved by: William H. Rott Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Project No:	691.070	Method:	8260FAB			
		Prep Meth:	SW5030B			
Field ID:	MW-3	Lab Samp ID:	4689-3			
Descr/Location:	MW-3	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1041	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	3.8	10.	PQL	ND	UG/L	10
Ethyl tert-butyl ether (ETBE)	3.0	10.	PQL	ND	UG/L	10
tert-Amyl methyl ether (TAME)	2.6	10.	PQL	ND	UG/L	10
Di-isopropyl ether (DIPE)	3.7	10.	PQL	ND	UG/L	10
tert-Butyl alcohol (TBA)	24.	100.	PQL	ND	UG/L	10
1,2-Dichloroethane	3.0	5.0	PQL	ND	UG/L	10
1,2-Dibromoethane	3.0	5.0	PQL	ND	UG/L	10
Benzene	2.7	5.0	PQL	ND	UG/L	10
Toluene	2.5	5.0	PQL	ND	UG/L	10
Ethylbenzene	2.5	5.0	PQL	5.37	UG/L	10
Xylenes	2.5	5.0	PQL	8.30	UG/L	10
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		86-118	SLSA	96%		1
Toluene-d8		88-110	SLSA	98%		1
Dibromofluoromethane		86-115	SLSA	94%		1

Approved by:

*William H. Pott*

Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Project No:	691.070	Method:	8260FAB			
		Prep Meth:	SW5030B			
Field ID:	MW-4	Lab Samp ID:	4689-4			
Descr/Location:	MW-4	Rec'd Date:	11/15/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	0903	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.38	1.0	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.30	1.0	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.26	1.0	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.37	1.0	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	2.4	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.30	0.50	PQL	ND	UG/L	1
1,2-Dibromoethane	0.30	0.50	PQL	ND	UG/L	1
Benzene	0.27	0.50	PQL	ND	UG/L	1
Toluene	0.25	0.50	PQL	ND	UG/L	1
Ethylbenzene	0.25	0.50	PQL	ND	UG/L	1
Xylenes	0.25	0.50	PQL	ND	UG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-118	SLSA		96%		1
Toluene-d8	88-110	SLSA		99%		1
Dibromofluoromethane	86-115	SLSA		94%		1

Approved by:

*Wesley H. Pott*Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Project No:	691.070	Method:	8260FAB			
		Prep Meth:	SW5030B			
Field ID:	MW-5	Lab Samp ID:	4689-5			
Descr/Location:	MW-5	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	0948	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	7.6	20.	PQL	ND	UG/L	20
Ethyl tert-butyl ether (ETBE)	6.0	20.	PQL	ND	UG/L	20
tert-Amyl methyl ether (TAME)	5.2	20.	PQL	ND	UG/L	20
Di-isopropyl ether (DIPE)	7.4	20.	PQL	ND	UG/L	20
tert-Butyl alcohol (TBA)	48.	200.	PQL	ND	UG/L	20
1,2-Dichloroethane	6.0	10.	PQL	ND	UG/L	20
1,2-Dibromoethane	6.0	10.	PQL	ND	UG/L	20
Benzene	5.4	10.	PQL	1490.	UG/L	20
Toluene	5.0	10.	PQL	13.4	UG/L	20
Ethylbenzene	5.0	10.	PQL	2760.	UG/L	20
Xylenes	5.0	10.	PQL	1020.	UG/L	20
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene		86-118	SLSA	95%		1
Toluene-d8		88-110	SLSA	99%		1
Dibromofluoromethane		86-115	SLSA	93%		1

Approved by:

*Wesley H. Ratz*Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	Total Petroleum Hydrocarbons (TPH) by GC/MS			
Project No:	691.070	Method:	8260TPH			
		Prep Meth:	SW5030B			
Field ID:	MW-1	Lab Samp ID:	4689-1			
Descr/Location:	MW-1	Rec'd Date:	11/15/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1133	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.04	0.05	PQL	ND	MG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-115	SLSA		96%		1

Approved by: Wesley H. Potts Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	Total Petroleum Hydrocarbons (TPH) by GC/MS			
Project No:	691.070	Method:	8260TPH			
		Prep Meth:	SW5030B			
Field ID:	MW-2	Lab Samp ID:	4689-2			
Descr/Location:	MW-2	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1209	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.80	1.0	PQL	18	MG/L	20
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						1
4-Bromofluorobenzene	86-115	SLSA		95%		

Approved by:

*Wesley M. Rott*Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

Page: 8

Project Name:	505 SANTA ROSA AVE	Analysis:	Total Petroleum Hydrocarbons (TPH) by GC/MS			
Project No:	691.070	Method:	8260TPH			
		Prep Meth:	SW5030B			
Field ID:	MW-3	Lab Samp ID:	4689-3			
Descr/Location:	MW-3	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	1041	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.40	0.50	PQL	5.6	MG/L	10
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene	86-115	SLSA		96%		1

Approved by:

*William H. Petty*Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	Total Petroleum Hydrocarbons (TPH) by GC/MS			
Project No:	691.070	Method:	8260TPH			
		Prep Meth:	SW5030B			
Field ID:	MW-4	Lab Samp ID:	4689-4			
Descr/Location:	MW-4	Rec'd Date:	11/15/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	0903	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.04	0.05	PQL	ND	MG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-115	SLSA		96%		1

Approved by:

*William H. Potts*Date: 11/30/05

## Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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Project Name:	505 SANTA ROSA AVE	Analysis:	Total Petroleum Hydrocarbons (TPH) by GC/MS			
Project No:	691.070	Method:	8260TPH			
		Prep Meth:	SW5030B			
Field ID:	MW-5	Lab Samp ID:	4689-5			
Descr/Location:	MW-5	Rec'd Date:	11/11/2005			
Sample Date:	11/11/2005	Prep Date:	11/15/2005			
Sample Time:	0948	Analysis Date:	11/15/2005			
Matrix:	Water	QC Batch:	20051115C			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.80	1.0	PQL	25.	MG/L	20
SURROGATE AND INTERNAL STANDARD RECOVERIES:						
4-Bromofluorobenzene	86-115	SLSA	95%	1		

Approved by: William H. Rott Date: 11/30/05

**QA/QC Report**  
**Method Blank Summary**

Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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QC Batch:	20051115C	Analysis:	VOCs by GC/MS Fuel Additives Plus BTEX			
Matrix:	Water	Method:	8260FAB			
Lab Samp ID:	4689MB	Prep Meth:	SW5030B			
Analysis Date:	11/15/2005	Prep Date:	11/15/2005			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Methyl-tert-butyl ether (MTBE)	0.38	1.0	PQL	ND	UG/L	1
Ethyl tert-butyl ether (ETBE)	0.30	1.0	PQL	ND	UG/L	1
tert-Amyl methyl ether (TAME)	0.26	1.0	PQL	ND	UG/L	1
Di-isopropyl ether (DIPE)	0.37	1.0	PQL	ND	UG/L	1
tert-Butyl alcohol (TBA)	2.4	10.	PQL	ND	UG/L	1
1,2-Dichloroethane	0.30	0.50	PQL	ND	UG/L	1
1,2-Dibromoethane	0.30	0.50	PQL	ND	UG/L	1
Benzene	0.27	0.50	PQL	ND	UG/L	1
Toluene	0.25	0.50	PQL	ND	UG/L	1
Ethylbenzene	0.25	0.50	PQL	ND	UG/L	1
Xylenes	0.25	0.50	PQL	ND	UG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-118	SLSA		97%		1
Toluene-d8	88-110	SLSA		100%		1
Dibromofluoromethane	86-115	SLSA		94%		1

**QA/QC Report**  
**Method Blank Summary**

Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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QC Batch:	20051115C	Analysis:	Total Petroleum Hydrocarbons (TPH) by			
Matrix:	Water	Method:	8260TPH			
Lab Samp ID:	4689MB	Prep Meth:	SW5030B			
Analysis Date:	11/15/2005	Prep Date:	11/15/2005			
Basis:	Not Filtered	Notes:				
Analyte	Det Limit	Rep Limit	Note	Result	Units	Pvc Dil
Gasoline Range Organics (C5-C12)	0.04	0.05	PQL	ND	MG/L	1
<b>SURROGATE AND INTERNAL STANDARD RECOVERIES:</b>						
4-Bromofluorobenzene	86-115	SLSA		97%		1

**QA/QC Report**  
**Matrix Spike/Duplicate Matrix Spike Summary**

Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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QC Batch: 20051115C  
 Matrix: Water  
 Lab Samp ID: 4689MS  
 Basis: Not Filtered

Project Name: Lab Generated or Non COE Sample  
 Project No.: Lab Generated or Non COE Sample  
 Field ID: Lab Generated or Non COE Sample  
 Lab Ref ID: 4686-1

Analyte	Analysis	Method	Spike Level DMS	Sample Result	Spike Result DMS	Units	% Recoveries		Acceptance Criteria	RPD
							MS	DMS		
1,2-Dibromoethane	8260FAB	10.0	10.0	ND	9.78	9.52	97.8	95.2	2.7	130-70 MSA 20MSP
1,2-Dichloroethane	8260FAB	10.0	10.0	ND	8.88	8.74	88.8	87.4	1.6	130-70 MSA 20MSP
Benzene	8260FAB	10.0	10.0	ND	10.2	10.1	102	101	0.99	127-76 MSA 20MSP
Di-isopropyl ether (DIPE)	8260FAB	10.0	10.0	ND	8.31	8.55	83.1	85.5	2.8	130-70 MSA 20MSP
Ethyl tert-butyl ether (ETBE)	8260FAB	10.0	10.0	ND	8.37	8.34	83.7	83.4	0.36	130-70 MSA 20MSP
Ethylbenzene	8260FAB	10.0	10.0	ND	10.8	10.5	108	105	2.8	130-70 MSA 20MSP
Methyl-tert-butyl ether (MTBE)	8260FAB	9.97	9.97	4.93	12.8	12.7	78.9	77.9	1.3	130-70 MSA 20MSP
Toluene	8260FAB	10.0	10.0	ND	10.3	10.1	103	101	2.0	125-76 MSA 20MSP
Xylenes	8260FAB	30.0	30.0	ND	31.0	30.7	103	102	0.98	130-70 MSA 20MSP
tert-Amyl methyl ether (TAME)	8260FAB	10.0	10.0	ND	8.44	8.47	84.4	84.7	0.35	130-70 MSA 20MSP
tert-Butyl alcohol (TBA)	8260FAB	50.0	50.0	ND	34.7	37.9	69.4	75.8	8.8	140-60 MSA 25MSP
4-Bromofluorobenzene	8260FAB	100.	100.	94.	94.	95.	94.0	95.0	1.1	118-86 SLSA 20SLSP
Dibromofluoromethane	8260FAB	100.	100.	94.	94.	95.	94.0	95.0	1.1	115-86 SLSA 20SLSP
Toluene-d8	8260FAB	100.	100.	99.	99.	99.	99.0	99.0	0.00	110-88 SLSA 20SLSP

**QA/QC Report**  
**Matrix Spike/Duplicate Matrix Spike Summary**

Bace Analytical, Windsor, CA

Lab Report No.: 4689 Date: 11/30/2005

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QC Batch: 20051115C  
Matrix: Water  
Lab Samp ID: 4689MS  
Basis: Not Filtered

Project Name: 505 SANTA ROSA AVE  
Project No.: 691.070  
Field ID: MW-1  
Lab Ref ID: 4689-1

Analyte	Analysis Method	Spike Level		Sample Result	Spike Result DMS	Units	% Recoveries MS DMS RPD	Acceptance Criteria RPD
		MS	DMS					
Gasoline Range Organics (C5-C12)	8260TPH	0.50	0.50	ND	0.46	0.47 MG/L	92.0 94.0 2.2	130-70 MSA 20MSP
4-BromoFluorobenzene	8260TPH	100.	100.	96.	94.	PERCENT	94.0 94.0 0.00	115-86 SLSA 20SLSP

## Chain-of-Custody Form

## **APPENDIX D**

### **Clearwater Group Environmental Services Data**



updated on 3/15/05

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# CLEARWATER GROUP

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**WELL GAUGING/PURGING CALCULATIONS  
DATA SHEET**

**229 Tewksbury Avenue,  
Point Richmond, CA 94801  
Tel (510) 307-9943 Fax (510) 232-2823**

Tech(s):  
Rodney Berry  
ERIC Austin

Date: 10/28/05 Job No.: AB021G

Location: 421 SANTA ROSA  
SANTA ROSA, CA

Drums on Site @ TOA/TOD

Total number of DRUMS used for this event

Soil: 

Water: 

Soil: 

Water:

**Explanation:**

DTB = Depth to Bottom

**DTW = Depth to Water**

ST = Saturated Thickness (DTB-DTW) must be > 1 foot

CV = Casing Volume (ST x cf)

$PV = \text{Purge Volume (standard } 3 \times CV, \text{ well development } 10 \times CV)$

SPI = Thickness of Separate Phase Liquid

### Conversion Factors (cJ)

2-inch diameter well cf = 0.16 gal/ft

4-inch diameter well cf = 0.65 gal/ft

6 inch diameter well cf = 1.44 gal.ft



Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-1A

Matrix : Water

Lab Number : 46683-10

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	640	2.5	ug/L	EPA 8260B	11/1/2005
Toluene	77	2.5	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	1800	2.5	ug/L	EPA 8260B	11/1/2005
Total Xylenes	1800	2.5	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 15	15	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	31000	500	ug/L	EPA 8260B	11/3/2005
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surrogate)	97.7		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surrogate)	103		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surrogate)	96.5		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surrogate)	96.6		% Recovery	EPA 8260B	11/1/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 46683  
 Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-2A	Matrix : Water	Lab Number : 46683-06		
Parameter	Measured Value	Method Reporting Limit	Units	Date Analyzed
Benzene	87	0.50	ug/L	11/2/2005
Toluene	1.0	0.50	ug/L	11/2/2005
Ethylbenzene	25	0.50	ug/L	11/2/2005
Total Xylenes	2.0	0.50	ug/L	11/2/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	11/2/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	11/2/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	11/2/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	11/2/2005
Tert-Butanol	< 5.0	5.0	ug/L	11/2/2005
TPH as Gasoline	4200	50	ug/L	11/2/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	11/2/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	11/2/2005
Toluene - d8 (Surrogate)	105		% Recovery	11/2/2005
4-Bromofluorobenzene (Surrogate)	105		% Recovery	11/2/2005
Dibromofluoromethane (Surrogate)	103		% Recovery	11/2/2005
1,2-Dichloroethane-d4 (Surrogate)	95.7		% Recovery	11/2/2005

Approved By: Joel Kiff



Report Number : 46683  
 Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-4

Matrix : Water

Lab Number : 46683-08

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	1200	2.5	ug/L	EPA 8260B	11/1/2005
Toluene	32	2.5	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	99	2.5	ug/L	EPA 8260B	11/1/2005
Total Xylenes	82	2.5	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 15	15	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	11000	250	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surrogate)	106		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surrogate)	107		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surrogate)	104		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surrogate)	97.1		% Recovery	EPA 8260B	11/1/2005

Approved By: Joel Kiff



Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-5

Matrix : Water

Lab Number : 46683-07

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	2.7	0.50	ug/L	EPA 8260B	11/2/2005
Toluene	2.4	0.50	ug/L	EPA 8260B	11/2/2005
Ethybenzene	10	0.50	ug/L	EPA 8260B	11/2/2005
Total Xylenes	8.1	0.50	ug/L	EPA 8260B	11/2/2005
Methyl-t-butyl ether (MTBE)	0.56	0.50	ug/L	EPA 8260B	11/2/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/2/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/2/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/2/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/2/2005
TPH as Gasoline	2400	50	ug/L	EPA 8260B	11/2/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/2/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/2/2005
Toluene - d8 (Surrogate)	99.0		% Recovery	EPA 8260B	11/2/2005
4-Bromofluorobenzene (Surrogate)	103		% Recovery	EPA 8260B	11/2/2005
Dibromofluoromethane (Surrogate)	97.3		% Recovery	EPA 8260B	11/2/2005
1,2-Dichloroethane-d4 (Surrogate)	99.1		% Recovery	EPA 8260B	11/2/2005

Approved By: Joel Kliff

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Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-6 Matrix : Water Lab Number : 46683-01

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	1.2	0.50	ug/L	EPA 8260B	11/1/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	450	50	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surr)	107		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surr)	105		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	11/1/2005

Approved By: Joel Kiff



Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-7

Matrix : Water

Lab Number : 46683-04

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	2.4	0.50	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surf)	106		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surf)	104		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surf)	107		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surf)	101		% Recovery	EPA 8260B	11/1/2005

Approved By: Joe Kliff



Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-8

Matrix : Water

Lab Number : 46683-02

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	3.8	0.50	ug/L	EPA 8260B	11/1/2005
DlIsopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surf)	99.5		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surf)	98.7		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surf)	97.3		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Sum)	97.5		% Recovery	EPA 8260B	11/1/2005

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Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-8

Matrix : Water

Lab Number : 46683-03

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	7.2	0.50	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surrogate)	106		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surrogate)	107		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surrogate)	107		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surrogate)	99.0		% Recovery	EPA 8260B	11/1/2005

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Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-10

Matrix : Water

Lab Number : 46683-05

Sample Data : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	21	0.50	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/1/2005
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surrogate)	106		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surrogate)	106		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surrogate)	107		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Surrogate)	102		% Recovery	EPA 8260B	11/1/2005

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Report Number : 46683

Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-11

Matrix : Water

Lab Number : 46683-09

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	38	2.0	ug/L	EPA 8260B	11/1/2005
Toluene	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Ethylbenzene	120	2.0	ug/L	EPA 8260B	11/1/2005
Total Xylenes	16	2.0	ug/L	EPA 8260B	11/1/2005
Methyl-t-butyl ether (MTBE)	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Diisopropyl ether (DIPE)	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Ethyl-t-butyl ether (ETBE)	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Tert-amyl methyl ether (TAME)	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Tert-Butanol	< 8.0	8.0	ug/L	EPA 8260B	11/1/2005
TPH as Gasoline	14000	250	ug/L	EPA 8260B	11/3/2005
1,2-Dichloroethane	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
1,2-Dibromoethane	< 2.0	2.0	ug/L	EPA 8260B	11/1/2005
Toluene - d8 (Surrogate)	98.4		% Recovery	EPA 8260B	11/1/2005
4-Bromofluorobenzene (Surrogate)	107		% Recovery	EPA 8260B	11/1/2005
Dibromofluoromethane (Surrogate)	96.2		% Recovery	EPA 8260B	11/1/2005
1,2-Dichloroethane-d4 (Sum)	90.7		% Recovery	EPA 8260B	11/1/2005

Approved By: Joel Kiff



Report Number : 46683  
 Date : 11/7/2005

Project Name : 421 SANTA ROSA

Project Number : AB021G

Sample : MW-12

Matrix : Water

Lab Number : 46683-11

Sample Date : 10/28/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	4500	9.0	ug/L	EPA 8260B	11/3/2005
Toluene	230	9.0	ug/L	EPA 8260B	11/3/2005
Ethylbenzene	3100	9.0	ug/L	EPA 8260B	11/3/2005
Total Xylenes	3600	9.0	ug/L	EPA 8260B	11/3/2005
Methyl-t-butyl ether (MTBE)	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
Dilisopropyl ether (DIPE)	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
Ethyl-t-butyl ether (ETBE)	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
Tert-amyl methyl ether (TAME)	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
Tert-Butanol	< 50	50	ug/L	EPA 8260B	11/3/2005
TPH as Gasoline	41000	900	ug/L	EPA 8260B	11/3/2005
1,2-Dichloroethane	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
1,2-Dibromoethane	< 9.0	9.0	ug/L	EPA 8260B	11/3/2005
Toluene - d8 (Surf)	98.4		% Recovery	EPA 8260B	11/3/2005
4-Bromofluorobenzene (Surf)	106		% Recovery	EPA 8260B	11/3/2005
Dibromofluoromethane (Surf)	99.0		% Recovery	EPA 8260B	11/3/2005
1,2-Dichloroethane-d4 (Surf)	97.7		% Recovery	EPA 8260B	11/3/2005

Approved By:

Joe Kiff